

**ATTACHMENT 1 - B**

To: Members, Water Use Efficiency Subcommittee  
From: Tom Gohring, WUE Program Manager  
Date: March 4, 2003  
Re: Proposed Chair – WUE Science Review Panel

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As noted earlier, I am proposing to select a Panel Chair prior to moving forward with the recruitment and selection of the full Water Use Efficiency Science Review Panel. I believe this sequencing is important, as it will allow the Panel Chair to be actively involved in the recruitment and selection of the other Panel members.

To move forward with this recommendation, I am proposing that Dr. Jack Keller serve as the WUE Panel Chair; in that capacity, he also would be filling the agricultural water management specialist slot. I believe Dr. Keller is uniquely qualified to serve in this capacity, given his professional background, his familiarity with both WUE and the overall CALFED Program, and his credibility with a diverse set of stakeholders. Below is a brief synopsis of my rationale for proposing Dr. Keller:

- **Professional Background.** Dr. Keller is recognized as an international expert in the field of irrigation technology transfer, irrigation and irrigated agricultural policy formulation, and the problems associated with improving irrigated agriculture in both developed and developing countries. He also has been involved in several projects focused on urban landscape irrigation. Currently Professor Emeritus of Agricultural and Irrigation Engineering for the Biological and Irrigation Engineering Department at Utah State University, he also is founder and Chief Executive Officer of Keller-Bliesner Engineering. He received his Ph.D. in Irrigation Engineering from Utah State University, and his M.S. in Irrigation Engineering from Colorado State University. Through his public and private activities, Dr. Keller has provided advisory services on irrigation matters in over 50 different countries in all regions of the world. He currently serves as Senior Policy Advisor in Kansas, Egypt, Morocco and California. A brief CV for Dr. Keller is attached.
- **Experience with the CALFED Program.** Dr. Keller has been associated with the CALFED Bay-Delta Program since 1998, first as a member of the Independent Review Panel on Agricultural Water Conservation Potential and now as both Senior Integrator for the WUE Program and a member of the Independent Review Panel on Agricultural Water Use Measurement. In his work with the WUE Program, Dr. Keller has helped co-invent CALFED's regionally based, objective-oriented approach to agricultural water conservation. More recently, he has been working with the CALFED Science Program to foster CALFED-wide integration discussions. This effort has required Dr. Keller to begin integrating approaches across the WUE Program's agricultural, urban and recycling components, as well as fostering extra-WUE deliberations related to ecosystem restoration, water quality and water management strategies.

- **Work with Stakeholder Groups.** Dr. Keller is adept at working collaboratively with a wide range of parties and stakeholders, from agricultural and urban water agency managers to environmental groups to scientists and technical experts. In his work with CALFED and elsewhere, Dr. Keller has proven himself particularly adept at working through and explaining complex, technical issues in a manner that is perceived as credible to diverse stakeholders. In his work on the two CALFED WUE panels, Dr. Keller has played a pivotal role in integrating views in a manner that forges a clear direction and concrete next steps.

Based on these experiences and skills, I believe Dr. Keller can ably tackle what I see as the key tasks of the Panel Chair: working with the Authority's WUE Program Manager and others to focus the Panel's work on the most pressing science-related topics; fostering integration across the WUE Program's different elements and with other CALFED Programs; and, ensuring the Panel's work is relevant, sound and credible.

I recognize that while some Subcommittee members are quite familiar with Dr. Keller's background, others have not had an opportunity to meet or work with him. Attached please find a copy of Dr. Keller's CV. (A more extensive CV is available upon request.)

I look forward to discussing this proposal with you and answering any questions you might have.

# KELLER-BLIESNER ENGINEERING

IRRIGATION AND WATER RESOURCES

78 EAST CENTER  
LOGAN, UTAH 84321-4619

PHONE (435) 753-5651  
FAX (435) 753-6139

## JACK KELLER

## Chief Executive Officer

- **Education:**  
B.S. Civil Engineering, University of Colorado, 1953  
M.S. Irrigation Engineering, Colorado State University, 1955  
Ph.D. Agricultural & Irrigation Engineering, Utah State University, 1967
- **Affiliation:**  
Dr. Jack Keller is the founder and Chief Executive Officer of Keller-Bliesner Engineering LLC, and Professor Emeritus, Agricultural and Irrigation Engineering Department, Utah State University, both in Logan, Utah.
- **Over 48 Years of Professional Experience Specializing in:**  
Teaching, research and consulting in pressurized irrigation systems, agricultural resource development; and water management planning, conservation, verification, and monitoring.
- **Engineering Registration and Technical Skills:**  
Dr Keller is a Registered Professional Irrigation Engineer in Utah and a Registered Agricultural Engineer in California. He has personal experience with irrigated agriculture, both as an owner and a manager of large center-pivot irrigated farms in Colorado and Kansas. During his tenure at the University he has taught and carried out research in surface, sprinkle and trickle irrigation. He has directed multi-disciplinary socio-technical assistance programs for transferring irrigation technologies worldwide. His technical skills include leadership activities related to: efficient irrigated agricultural development; river basin water management and conservation planning; and irrigation water conservation planning, monitoring and verification.
- **Professional Experience Most Relevant for CALFED Consideration:**  
Currently Dr. Keller's consulting activities that are most relevant for CALFED consideration are related to efficient irrigated agricultural development; and irrigation water conservation planning, monitoring and verification as follows:
  - He has been involved as a consultant for CALFED since he served as a member on the "Agricultural Water Management Efficiency Review Panel" in September 1998. Shortly after that he was appointed as the Senior Scientist and Integrator for the Agricultural portion of the CALFED Water Use Efficiency Program. As Senior Scientist for Ag WUE his duties include:
    - Developing the strategies and scientific review for the Ag WUE objective oriented approach, which is based on the development of Quantifiable

- Objectives (QOs) for agricultural water management actions designed to meet CALFED's Targeted Benefits.
  - Developing criteria and processes for refining QOs.
  - Assisting in the development of the initial set of 41 QOs and refining these and developing new QOs for the remaining 155 CALFED Targeted Benefits.
  - Serving as a member of the "Independent CALFED Water Measurement Review Panel", which is part of the process for developing Appropriate Agricultural Water Measurement Legislation.
  - Analyzing the measurement objectives set forth by the Measurement Technical Task Force.
  - Providing a senior review of the Measurement Approach and provide recommendations for it.
- In addition to the consulting work with CALFED his other current activities include serving as:
  - Team leader for the Conservation Verification Consultants who are responsible for verifying the water savings resulting from the conservation actions sponsored under the Imperial Irrigation District- Metropolitan Water District Conservation Agreement (since 1992);
  - Team leader for the Program Advisory Consultants who are responsible for providing guidance for the completion of the 110,000-acre Navajo Indian Irrigation Project (since 2001);
  - Science Liaison Officer for the International Water Management Institute (since 1994); and
  - Consultant for the US Bureau of Reclamation Central Valley Improvement Act, CVPIA, (since 1999).
- **Publications and Patents:**

Author of 84 technical papers (26 published in refereed journals), 15 popular articles, 51 major consulting reports, 5 handbooks, 2 textbooks and 4 patents on modern irrigation design, implementation, management and evaluation. Some recent publications and patents of interest from the CALFED perspective are:

#### **Textbooks:**

Irrigation System Evaluation: A Guide for Management. J.L. Merriam and J. Keller. Agricultural and Irrigation Engineering Department, Utah State University, Logan, Utah. 1974. 271 p.

Sprinkle and Trickle Irrigation System Design. J. Keller and R.D. Bliesner. Textbook published by Van Nostrand Reinhold. New York, New York. 1990. 652 p.

#### **Journal and Proceedings Papers:**

Effective Efficiency and Water Conservation Zones. A. Keller, and J. Keller. Proceedings of the ASCE Water Resources Conference. Seattle, Washington. September 1999.

Verification-Based Planning for Modernizing Irrigation Systems. J. Burns, G. Davids, K. Dimmitt, and J. Keller. Proceedings of the USCID Water Resources Conference. Fort Collins, Colorado. June 2000.

Reengineering Irrigation to Meet Growing Freshwater Demands. J. Keller. Proceedings of the 4<sup>th</sup> Decennial Irrigation Symposium. Phoenix, Arizona. November 2000. Pp 21-39.

### **Consulting Reports:**

Potential for On-Farm Water Savings on the West side of the San Joaquin Valley of California, for Metropolitan Water District of Southern California, Los Angeles, California. J. Keller, R.D. Bliesner, J.M. Lord, G. Underhill. February 1990.

Irrigation Water Conservation Verification Principles and Guidelines. CVC in-house Draft report for the IID/MWD Irrigation Water Conservation Agreement. J. Keller, Grant Davids, and Joseph Burns. January 1994.

Bernard Galleano Reservoir Water Conservation Verification Summary Report. CVC in-house Draft report for the IID/MWD Irrigation Water Conservation Agreement. Joseph Burns, J. Keller, and Grant Davids. February 1996.

Main and Lateral Canal Concrete Lining Water Conservation Verification Summary Report. CVC in-house Draft report for the IID/MWD Irrigation Water Conservation Agreement. J. Keller, Grant Davids, and Joseph Burns (with A. Keller and Mike Petersen). April 1996.

Analysis of Canal Spillage in Imperial Irrigation District. CVC in-house Draft report for the IID/MWD Irrigation Water Conservation Agreement. Grant Davids, J. Keller and Joseph Burns (with Bryan Thoreson). September 1997 revised September 1998.

System Automation Water Verification Summary Report. CVC in-house Draft report for the IID/MWD Irrigation Water Conservation Agreement. J. Keller, Grant Davids, and Joseph Burns (with A. Keller, and Mike Petersen, and Bryn Thoreson). December 1998.

Opportunities for Transferable Water Savings by Applying the “Equivalency” Concept in the Sacramento River Basin. In-house Draft Discussion Paper for the USBR (Sacramento Office). Grant Davids and J. Keller. January 1999.

12-Hour Delivery Program Conservation Verification Summary Report for Project 9 of the IID/MWD Irrigation Water Conservation Agreement. J. Keller. October 2000.

Lateral Interceptor Systems Conservation Verification Summary Report for Projects 3, 8, & 17 of the IID/MWD Irrigation Water Conservation Agreement. J. Keller. October 2000.

Engineering Low-Cost Micro-Irrigation for Small Plots. J. Keller, D. L. Adhikari, M. R. Petersen, and S. Suryawanshi. June 2001.

Administrative Guide to Verification of IID/MWD Conservation Program Water Savings. J. Keller. May 2002.

**Patents:**

U.S. Patent No. 4,577,802. Method and System for Furrow Irrigation; (Surge-Flow). J. Keller and G.E. Stringham. 1986.

U.S. Patent No. 4,673,128. Method and System for Furrow Irrigation Continuation (Transition Phase Claims). J. Keller and G.E. Stringham. 1987.

U.S. Patent No. 3,767,119. Fluidic Cycled Sprinkler Head. E.C. Tibbols and J. Keller.

U.S. Patent No. 3,807,430. Flushing Flow Control Emitter Unit. J. Keller.